

REMARKS

I. Preliminary Matters

The Examiner has not acknowledged or indicated approval of the four sheets of replacement drawings filed on January 3, 2005. Accordingly, Applicant respectfully requests the Examiner's acknowledgement in a subsequent Office Action.

II. Rejection under 35 U.S.C. § 103(a) in view of Kudo (U.S. Pat. No. 5,552,098), Maus (U.S. Pat. No. 5,340,303), Kunio (JP Publication No. 09-262880) and Ise (U.S. Pat. No. 3,647,338).

Claims 1-5, 13-14, and 19-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kudo in view of Maus, Kunio and Ise.

A. Claim 1

Applicant submits that claim 1 is patentable over the cited references. For example, claim 1 recites that molten resin still present in the resin reservoir is pushed back into the gate by the cut punch, at a time when the resin material in direct contact with the dies is gradually solidified.

In the January 3, 2005 Amendment, Applicant argued that Maus, Ise and Kunio fail to teach or suggest the claimed feature. Accordingly, the Examiner cites to Kudo in the current Office Action. Applicant submits that Kudo fails to cure the deficient teachings of Maus, Ise and Kunio. For example, the Examiner refers to column 4, lines 55-64 of Kudo as disclosing that the punch 26 is moved to push still molten resin back into the gate (pg. 2 of Office Action).

However, as specifically set forth in lines 60-64 of column 4, Kudo discloses that if the center aperture 35 is bored while the synthetic resin injected into the mold cavity is still in the molten state (i.e., “yet in the molten state”), punching burrs 38 tend to be produced, which are undesirable. Accordingly, contrary to the features recited in claim 1, Kudo teaches against moving the punch while the resin is still in the molten state. Further, in column 9, lines 6-21, Kudo teaches that the resin charged into the mold cavity 44 is cooled into a solidified form before the punch 66 is protruded to bore the centering aperture 100a. Accordingly, when viewed in its entirety, Applicant submits that Kudo fails to cure the deficient teachings of the recited references.

Irrespective of the above, Applicant submits that that Examiner has not set forth motivation for why one skilled in the art would be motivated to modify the remaining references by Kudo (i.e., established a prima facie case of obviousness). Nevertheless, for the reasons presented above, Applicant submits that Kudo fails to teach the claimed feature. In addition, even if Kudo did teach the claimed feature, Applicant submits that one skilled in the art would not be motivated to modify Ise to push molten material. For example, as set forth in the October 7, 2005 Response, considering that the unhardened material of Ise is merely pushed into the “gap,” it is evident that such unhardened material is not “molten.” Otherwise, the material would drip down the sides of the templets (i.e., since the reference discloses that the die plate 8 is opened at the same time as movement of the rods 11 and 11’). Rather, as shown in Figure 4B, the material pushed out is at least hardened to a point that it is a single piece that can be disposed

of (i.e., not molten). Therefore, even if Kudo (or another reference) did in fact teach the claimed feature, one skilled in the art would not be motivated to combine the reference with Ise.

In addition, on page 5 of the current Office Action, the Examiner merely responded to the one argument of pushing material while it is still in a molten state. The Examiner did not address the remaining points set forth by the Applicant in the October 7, 2005 Response. Therefore, Applicant again submits the following remarks and respectfully requests the Examiner to address the remarks if the rejections are to be maintained.

As previously set forth, Ise discloses a process of pushing material with rods 11 and 11', and dispelling unhardened material remaining in the runner 5₂. In particular, the rods 11 and 11' are driven, and the die plate 8 opens between templets 1b₂ and 1c₂, as shown in Figure 4B, so as to push excess material to a gap defined between the separated templets (col. 4, lines 14-35). The rods 11 and 11' act as a type of cut punch to push the unhardened material into runner 5₂ from the cavities 3₂ and 4₂. Applicant submits, however, that the runner 5₂ of Ise differs from the present invention in that 1) it does not disclose a "gate" as the term is commonly used in the art, 2) it is not provided in a fixed die, and 3) the material pushed into the runner 5₂ from the cavities 3₂ and 4₂ is not a molten resin material, rather it is an unhardened material pushed out into the gap in order to make a central opening 13 in the disc records 12 (see Fig. 4C).

Furthermore, in the non-limiting embodiments of the present invention, the purpose of pushing the molten resin material back into the gate is to put the molten resin material back into the runner within the fixed die to keep it molten and ready for use in the next molding process.

This differs from Ise's disclosure which is for pushing out the material to make the opening 13 in the disc records 12. As set forth above, when considering that the unhardened material of Ise is merely pushed into the "gap," it is evident that such unhardened material is not "molten."

Otherwise, the material would drip down the sides of the templets (i.e., since the reference discloses that the die plate 8 is opened at the same time as movement of the rods 11 and 11').

Rather, as shown in Figure 4B, the material pushed out is at least hardened to a point that it is a single piece that can be disposed of (i.e., not molten). Therefore, one skilled in the art would not be motivated to modify Ise in the manner proposed by the Examiner.

Finally, Applicant previously submitted, and again submits, that the injection mold of the present invention and Maus have completely different structures of the injection mold of Ise. Thus, one skilled in the art would not readily be motivated to combine the structures of Ise and Maus. For example, Maus achieves separation of the optical disk (4) from the unwanted sprue (3) and flange (12) by axial displacement (retraction rearward toward the clamp end of the injection molding machine, not shown) of sleeve (9), which securely holds the sprue (3) when the mold is opened, thereby "tearing out" the sprue (3) to form a centerhole in the optical disk (see col. 4, lines 54-61, and Figures 1A and 2A). A skilled artisan would understand that Maus' sprue (3) defines the pathway of the runner from the injection molding machine's nozzle tip (not shown) to the "gate", likewise defined by the exit of the sprue (3) to the flange (12) (see Figure 1A).

As stated above, Ise discloses a process of pushing material with rods 11 and 11', and dispelling unhardened material remaining in the runner 5₂. However, Ise's structure is quite

different from both Maus and the present invention. Ise defines “runners” (5_2 in Figure 2) formed across the templets $1b_2$ and $1c_2$ which lead to the centers of the cavities 3_2 and 4_2 , where the runners are formed straight to make a right angle with the planes of the cavities, while a sprue 6_2 contiguous to the runners 5_2 is formed between the templets $1b_2$ and $1c_2$ in the axial direction of the nozzle 22 (see Figure 2). The runners and rods (11 and 11') are used to create the central openings 13 in the disc records 12 and to push out the excess material remaining in the runners into a gap defined between the separated templets $1b_2$ and $1c_2$ (col. 4, lines 25-31).

In comparison, Maus' runner and Ise's runners are structurally different as Maus' runner would be located within its sprue whereas Ise's runners are defined as being external to the sprue. Thus, for at least this structural distinction, a skilled artisan would not be motivated to apply Maus' runners with Ise's runners and rods (11 and 11'). Furthermore, Maus already has an ejector pin (14) to assist with ejecting the unwanted portion in the flange 12, thereby creating a centerhole. No additional rod(s), as taught in Ise, would be necessary or helpful in Maus' process to provide a “cut punch.”

Applicant submits that the structural location of Ise's runners, Ise's apparent lack of a defined “gate”, and Ise's lack of a defined “communicating portion” would not satisfy Applicant's requirement for “a runner provided in the fixed die and a gate provided in the fixed die” and “a communicating portion that allows the resin reservoir and the cavity to communicate with each other” (Claim 1). Furthermore, Applicant requires that the cut punch has a “distal end [which] is located *between* the resin reservoir and the cavity at such a position as to open a communicating portion” (emphasis added) (Claim 1). Ise's distal end of the cut punch, or rods

(11 and 11' in Figure 4A), appears to be located *after* Ise's resin reservoirs, or molding cavities (3₂ and 4₂). Thus, Applicant submits that one skilled in the art would not be motivated to combine the teachings of Maus and Ise in a manner as set forth in the Office Action.

In view of the above, and since Kudo and Kunio fails to cure the deficient teachings of Maus and Ise, Applicant submits that claim 1 is patentable over the cited references, and respectfully requests the Examiner to reconsider and withdraw the rejection.

B. Claims 2-5 and 19

Since claims 2-5 and 19 are dependent upon claim 1, Applicant submits that such claims are patentable over the cited references at least by virtue of their dependency.

C. Claim 13

Since claim 13 contains features that are analogous to the features recited in claim 1, Applicant submits that claim 13 is patentable over the cited references for at least reasons analogous to those as presented above.

D. Claims 14 and 20

Since claims 14 and 20 are dependent upon claim 13, Applicant submits that such claims are patentable at least by virtue of their dependency.

Response under 35 U.S.C. § 1.111
U.S. Application No. 09/622,360

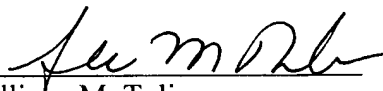
III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860


Allison M. Tulino
Registration No. 48,294

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

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